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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/680,896	10/08/2003	Toshihiko Ishigami	2562/71228/JPW/PJP/FHB	6288

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EXAMINER

WALFORD, NATALIE K

ART UNIT	PAPER NUMBER
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2879

DATE MAILED: 12/15/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/680,896	Applicant(s) ISHIGAMI ET AL.	
	Examiner Natalie K. Walford	Art Unit 2879	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 November 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 and 10-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8 and 10-19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date: _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>11/06</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after allowance or after an Office action under *Ex Parte Quayle*, 25 USPQ 74, 453 O.G. 213 (Comm'r Pat. 1935). Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, prosecution in this application has been reopened pursuant to 37 CFR 1.114.

Applicant's submission filed on November 16, 2006 has been entered.

Allowable Subject Matter

The indicated allowability of claims 1-8 and 10-19 is withdrawn in view of the newly discovered reference(s) to Hiramoto. Rejections based on the newly cited reference(s) follow.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-3 and 5 are rejected under 35 U.S.C. 102(b) as being anticipated by Hiramoto et al. (US PUB 2001/0056294).

Regarding claim 1, Hiramoto discloses a metal vapor discharge lamp in figure 2 comprising: a refractory and light-transmitting hermetic vessel (see FIG. 2); a pair of electrode

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(item 12) fixed to said hermetic vessel; a discharge medium sealed in the hermetic vessel (paragraphs 83-86), the discharge medium containing a halide, a rare gas and substantially disusing mercury (paragraph 83); and most of light irradiated from the metal vapor discharge lamp having near-infrared wavelengths (750-1100 nm) (paragraphs 85-86).

Regarding claim 2, Hiramoto discloses the metal vapor discharge lamp according to claim 1, wherein the halide contains a halide of at least one of potassium (K), which radiates light of near-infrared wavelengths (750-1100 nm) (paragraph 84 and 90).

Regarding claim 3, Hiramoto discloses the metal vapor discharge lamp according to claim 1, further comprising a visible-light blocking filter (FIG. 1, item 6 and paragraph 66).

Regarding claim 5, Hiramoto discloses the metal vapor discharge lamp according to claim 1, wherein a distance between the pair of electrodes falls within a range of 1 mm to 6 mm (paragraph 82).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 4, 6-8, and 10-19 rejected under 35 U.S.C. 103(a) as being unpatentable over Hiramoto et al. (US PUB 2001/0056294) in view of Ishigami et al. (US 6,353,289).

Regarding claim 4, Hiramoto discloses the metal vapor discharge lamp according to claim 1, but does not expressly disclose that a wattage rating of the metal vapor discharge lamp

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is 100 W or less, as claimed by Applicant. Ishigami is cited to show a metal vapor discharge lamp that has a rate lamp power of at most 100 W (column 44, lines 52-58). Ishigami teaches that this rate lamp power can help control the lamp voltage (column 44, lines 52-58)

Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Hiramoto's invention to include a wattage rating of the metal vapor discharge lamp is 100 W or less as suggested by Ishigami for controlling the lamp voltage.

Regarding claim 6, Hiramoto discloses a metal vapor discharge lamp in figure 2 comprising: a refractory and light-transmitting hermetic vessel (see FIG. 2); a pair of electrode (item 12) fixed to said hermetic vessel; a discharge medium sealed in the hermetic vessel (paragraphs 83-86), the discharge medium containing a first halide and a rare gas (paragraphs 83-86), the first halide containing a halide of at least one of sodium (Na) (paragraph 86), the discharge medium substantially disusing mercury (paragraph 83), but does not expressly disclose a rare earth metal which radiates visible light (380-780 nm) and a ratio of visible-radiation power (380-780 nm) to near-infrared radiation power (750-1100 nm) falling within a range of 0.5:1 to 4.0:1, the visible-radiation power and the near-infrared radiation power being output when the metal vapor discharge lamp is in an ON state, as claimed by Applicant. Ishigami is cited to show a metal vapor discharge lamp that has a rare earth metal with a halide (column 11, lines 18-31). Ishigami teaches that it is known in the art that the light emission is increased and the arc can be narrowed (column 5, lines 9-22). The Examiner notes that since Ishigami uses a halide and a rare earth metal that the ratio would be present. Furthermore, Ishigami disclose that the ratio of emitted visible light to all the visible light emitted for the lamp should be small (column 8, line 64 thru column 9, line 4).

Therefore, it would have been obvious to one with ordinary skill in the art to modify Hiramoto's invention a rare earth metal which radiates visible light (380-780 nm) and a ratio of visible-radiation power (380-780 nm) to near-infrared radiation power (750-1100 nm) falling within a range of 0.5:1 to 4.0:1, the visible-radiation power and the near-infrared radiation power being output when the metal vapor discharge lamp is in an ON state as suggested by Ishigami for increasing light emission and narrowing the arc.

Regarding claim 7, the combined reference of Hiramoto and Ishigami disclose the metal vapor discharge lamp according to claim 6, wherein the discharge medium includes: a second halide which generates a relatively high vapor pressure and being a halide of at least one metal which emits a visible light less than that emitted by the metal of the first halide; a third halide containing a halide of at least one metal which radiates near-infrared light (Hiramoto; paragraphs 83-86).

Regarding claim 8, the combined reference of Hiramoto and Ishigami disclose the metal vapor discharge lamp according to claim 6, wherein the discharge medium contains a halide of at least one of potassium (K), which radiates light of near-infrared wavelengths (750-1100 nm) (paragraph 86).

Regarding claim 10, the combined reference of Hiramoto and Ishigami disclose the metal vapor discharge lamp according to claim 6, wherein a wattage rating of the metal vapor discharge lamp is 100 W or less (Ishigami; column 44, lines 52-58).

Regarding claim 11, the combined reference of Hiramoto and Ishigami disclose the metal vapor discharge lamp according to claim 6, wherein a distance between the pair of electrodes falls within a range of 1 mm to 6 mm (Hiramoto; paragraph 82).

Regarding claim 12, the combined reference of Hiramoto and Ishigami disclose the metal vapor discharge lamp according to claim 6, wherein the rare gas is Xe, Xe of five atoms or more being sealed in the hermetic vessel (Hiramoto; paragraph 96).

Regarding claim 13, the combined reference of Hiramoto and Ishigami disclose a projector in figure 6 of Ishigami comprising: a reflector (item 6); a metal vapor discharge lamp (item 5) as specified in any one of claims 1 to 12, the metal vapor discharge lamp being provided on the reflector; and a light control member covering a front surface of the reflector (Ishigami; FIG. 12, item 32).

Regarding claim 14, the combined reference of Hiramoto and Ishigami disclose the projector according to claim 13, wherein the projector is installed in a vehicle and used as a headlamp (Ishigami; FIG. 12 and column 1, lines 13-19).

Regarding claim 15, the combined reference of Hiramoto and Ishigami disclose the projector according to claim 13, further comprising visible-light blocking means for blocking visible light and passing near-infrared light therethrough in a high beam mode (Hiramoto; FIG. 1, item 6 and Ishigami; FIG. 27, item 86a), and means for removing the visible-light blocking means from a radiation direction of the metal vapor discharge lamp in a low beam mode (Hiramoto; FIG. 1, item 6 and Ishigami; FIG. 27, item 86b).

Regarding claim 16, the combined reference of Hiramoto and Ishigami disclose the projector according to claim 13, further comprising a visible-light blocking filter provided on at least one of front and rear surfaces of the light control member (Ishigami; FIG. 4, item 7).

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Regarding claim 17, the combined reference of Hiramoto and Ishigami disclose the projector according to claim 16, wherein the projector is installed in a vehicle and used as a headlamp (Ishigami; FIG. 12).

Regarding claim 18, the combined reference of Hiramoto and Ishigami disclose the projector according to claim 17, wherein the visible-light blocking filter blocks visible light and passes near-infrared light therethrough in a high beam mode (Hiramoto; FIG. 1, item 6 and Ishigami; FIG. 27, item 86a), and further comprising means for removing the visible-light blocking filter from a radiation direction of the metal vapor discharge lamp in a low beam mode (Hiramoto; FIG. 1, item 6 and Ishigami; FIG. 27, item 86b).

Regarding claim 19, the combined reference of Hiramoto and Ishigami disclose a metal vapor discharge lamp lighting device (Ishigami; FIG. 6, item 5) comprising: a metal vapor discharge lamp as specified in any one of claims 1 to 12; and a lighting circuit which supplies a current three times or more a rated lamp current after the metal vapor discharge lamp is lit, and reduces the current with a lapse of time (Ishigami; column 17, line 65 thru column 18, line 7).

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Natalie K. Walford whose telephone number is (571)-272-6012. The examiner can normally be reached on Monday-Friday, 8 AM - 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimesh Patel can be reached on (571)-272-2457. The fax phone number for the organization where this application or proceeding is assigned is (571)-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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